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| EXAMINER | |
|---|---|
| BERTAGNA, ANGELA MARIE | |
| **ART UNIT** | **PAPER NUMBER** |
| 1637 | |

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/780,963 | LAU ET AL. | |
| | Examiner | Art Unit | |
| | Angela Bertagna | 1637 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *27 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-85* is/are pending in the application.

4a) Of the above claim(s) *1-20,25-44 and 50-65* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-24,45-49 and 66-85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/19/04; 1/19/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group II, claims 21-24 and 45-49 in the reply filed on September 27, 2006 is acknowledged. Newly presented claims 66-85 also fall within the elected Group. Claims 21-24, 45-49, and 66-85 will be examined on the merits.

Claims 1-20, 25-44, and 50-65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 27, 2006.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-24, 45-49, and 66-85 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 21-24, 45-49, and 66-85 are indefinite, because claim 21 recites the limitation "contacting the PCR reaction products to separate the DNA fragments" and claim 45 recites the

limitation "contacting the DNA sequencing reaction products to separate dye-labeled ssDNA fragments". It is unclear whether the PCR or DNA sequencing reaction products are contacted with the particles mentioned in the preceding step or if they are contacted with another substance.

Claims 21-24, 45-49 and 66-85 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: (a) purification or separation of the PCR products (claim 21 and claims dependent therefrom) and (b) purification or separation of DNA sequencing reaction products (claim 45 and claims dependent therefrom). The preamble of claims 21 and 45 recite "a method for purifying", but no purification or separation step follows in the claims.

Claims 72 and 82 are further indefinite because they recite "the Mw of 1.7 megadaltons to 2.4 megadaltons" (claim 72) and "the Mw of 2.4 megadaltons to 4.9 megadaltons" (claim 82)". It is unclear whether the molecular weight refers to the ion exchange material or the polyelectrolyte coating. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 21, 24, 45, 48, 49, and 66-70, 73, 75, 76-81, 83, and 85 are rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by Ramstad et al. (US 2003/0228706 A1).

The applied reference has two common inventors (Harrold & Lau) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The instant claims are drawn to methods of purifying PCR and DNA sequencing products using particles comprising a core for ion-exchange and a polyelectrolyte coating.

Regarding claims 21 and 45, Ramstad teaches a method for purifying PCR reaction products or DNA sequencing reaction products, the method comprising:

(a) providing a plurality of particles, wherein each particle comprises a core for ion-exchange and a coating of polyelectrolyte (see paragraphs 70 & 71; paragraphs 20 and 56 and also Figure 7 provide further details regarding the particles used in the purification described in para. 70 & 71)

(b) contacting the PCR reaction products or DNA sequencing reaction products to separate dsDNA fragments or dye-labeled ssDNA fragments, respectively (paragraph 70 teaches

purification of dsDNA fragments from a PCR; paragraph 71 teaches purification of ssDNA fragments from a sequencing reaction mixture).

Regarding claim 24, Ramstad teaches that the method of claim 21 further comprises positioning a mixture comprising the plurality of particles in a column (paragraph 21).

Regarding claim 48, Ramstad teaches that the method of claim 45 further comprises removing residual dye artifacts (paragraph 71).

Regarding claim 49, Ramstad teaches that the method of claim 45 further comprises maintaining dye-labeled ssDNA fragment length (paragraph 71).

Regarding claims 66 and 76, Ramstad teaches coupling of the ion-exchange core with a PCR reaction product, such as dNTPs or salts (paragraphs 36 and 67) or a DNA sequencing reaction product, such as dye-labeled nucleotides or salts (paragraphs 36 and 69).

Regarding claims 67 and 77, Ramstad teaches that the particle is adapted to exclude dsDNA fragments greater than 100 bp (Figure 7 and paragraph 68, where a pore size excluding 100 nt ssDNA would also inherently exclude 100 bp dsDNA) and dye-labeled ssDNA fragments greater than 45 nt (paragraph 69, where particles excluding 10 nt ssDNA would also inherently exclude 45 nt ssDNA).

Regarding claims 68 and 78, Ramstad teaches that the core comprises porous ion-exchange material (paragraph 39 and Figure 7A).

Regarding claims 69 and 79, Ramstad teaches that the ion-exchange material is surface-activated (paragraph 43).

Regarding claims 70 and 80, Ramstad teaches particles with an average pore size of 100 Angstroms (paragraph 56), thereby anticipating the instantly claimed pore size ranges of 100-2000 Angstroms and 5-1000 Angstroms, respectively.

Regarding claims 73 and 83, Ramstad teaches that the polyelectrolyte comprises polyanions and polycations (paragraphs 21 & 39).

Regarding claims 75 and 85, Ramstad teaches providing a mixture of cationic and anionic ion-exchange particles (paragraph 21).

Regarding claim 81, the polyelectrolyte coatings recited by Ramstad in paragraph 61 inherently possess molecular weights between 1000 Da and 6.0 MDa.

5. Claims 21-24, 45-49, 66, 68, 69, 76, 78, and 79 are rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by Parthasarathy et al. (US 2003/0138779 A1).

The instant claims are drawn to methods of purifying PCR and DNA sequencing products using particles comprising a core for ion-exchange and a polyelectrolyte coating.

Regarding claims 21 and 45, Parthasarathy teaches a method for purifying PCR reaction products or DNA sequencing reaction products, the method comprising:

(a) providing a plurality of particles, wherein each particle comprises a core for ion-exchange and a coating of polyelectrolyte (paragraph 15)

(b) contacting the PCR reaction products or DNA sequencing reaction products to separate dsDNA fragments or dye-labeled ssDNA fragments, respectively (paragraphs 11 & 14; see also paragraphs 53, 59, and 60).

Regarding claims 22 and 46, Parthasarathy teaches that the contacting comprises moving the PCR reaction products or DNA sequencing reaction products through the particles using centripetal force (paragraph 74).

Regarding claims 23 and 47, Parthasarathy teaches that the plurality of particles comprises a first volume and that the PCR or DNA sequencing reaction products comprise a second volume, where the first volume is greater or equal to the second volume (Example 1 on page 11 and Example 10 on page 15 teach the use of particles in the form of membranes for purification of the reaction products. Here, five to ten microliters of sequencing reaction products or PCR products were added to the membrane). Since the volume of the added solutions (5-10 microliters) is much smaller than the volume of the membrane, anticipates the instant claims.

Regarding claim 24, Parthasarathy teaches that the method of claim 21 further comprises positioning a mixture comprising the plurality of particles in a column (paragraph 32).

Regarding claim 48, Parthasarathy teaches that the method of claim 45 further comprises removing residual dye artifacts (paragraphs 11, 59, and 60).

Regarding claim 49, Parthasarathy teaches that the method of claim 45 further comprises maintaining dye-labeled ssDNA fragment length (paragraphs 59-61).

Regarding claims 66 and 76, Parthasarathy teaches coupling of the ion-exchange core with a PCR reaction product, such as dNTPs or primers (paragraphs 119-120) or a DNA sequencing reaction product, such as dye-labeled nucleotides or salts (paragraph 52).

Regarding claims 68 and 78, Parthasarathy teaches that the core comprises porous ion-exchange material (paragraph 71).

Regarding claims 69 and 79, Parthasarathy teaches that the ion-exchange material is surface-activated (paragraph 15, where coating of the ion-exchange material with polyelectrolyte results in a surface-activated particle; see also paragraphs 34-37).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 67, 70-72, 77, and 80-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parthasarathy et al. (US 2003/0138779 A1) in view of Padhye et al. (US 5,658,548).

The instant claims are drawn to the PCR and DNA sequencing product purification methods of claims 21 and 45, further comprising the use of a resin that excludes dsDNA

fragments greater than 100 bp or ssDNA fragments greater than 45 nt. These claims also define the range of suitable pore sizes for the ion exchange material (100-2000 Angstroms, 1000 Angstroms, 5-1000 Angstroms, and 50 Angstroms) and suitable molecular weights for the polyelectrolyte coating (1.0 MDa – 3.0 MDa, 1.7 MDa – 2.4 MDa, 1000 Da – 6.0 MDa, 2.4 MDa – 4.9 MDa).

Parthasarathy teaches the method of claims 21, 68, 76, and 78, as discussed above.

Regarding claims 71 and 81, Parthasarathy teaches that the polyelectrolyte material has a molecular weight of 2.0 MDa (paragraph 44, where the PSSA polyelectrolyte inherently has a molecular weight of approximately 2.0 MDa).

Parthasarathy does teach a specific pore size for the ion exchange material.

Padhye teaches a method for isolating nucleic acids with lengths greater than about 50 bases using compositions comprising silica (see abstract). Padhye teaches application of the method to purification of PCR products from primer-dimers (Example 7, column 17, lines 31-61), single-stranded DNA (Example 5, column 15-16), or RNA (Examples 8 & 9, column 17-19).

Regarding claims 67, 70, 72, 77, 80, and 82, Padhye teaches that the pore size of the silica suspension used in the purification method is 30-300 Angstroms and specifically teaches use of a suspension with a pore size of 60 Angstroms (column 4, lines 23-35; see also column 10, lines 43-56). This pore size inherently excludes dsDNA fragments greater than 100 bp and ssDNA greater than 45 nt.

It would have been prima facie obvious for one of ordinary skill in the art at the time of invention to utilize an ion exchange material in the method Parthasarathy with a pore size of 30-

300 Angstroms. Padhye taught an ion exchange-based method of nucleic acid purification and specifically taught that pore sizes of 30-300 Angstroms were suitable for purification of nucleic acids longer than 50 bases (such as PCR products, ssDNA, or RNA) (see abstract and Examples 7-9, cited above). An ordinary practitioner would have been motivated by these teachings of Padhye to use an ion exchange material with such a pore size in the method taught by Parthasarathy in order to ensure that the target molecules (PCR products or ssDNA) were efficiently purified by the polyelectrolyte-coated ion exchange material. In other words, the ordinary artisan would have been motivated to use the small pore size suggested by Padhye in the method taught by Parthasarathy in order to obtain a more highly purified sample. Since Padhye expressly taught the use of silica resins with a pore sizes of 60, 100, or 250 Angstroms for purification of nucleic acids greater than 50 bases (column 10, lines 50-60), an ordinary practitioner would have expected a reasonable level of success in using ion exchange resins with similar pore sizes in the method taught by Parthasarathy. Therefore, one of ordinary skill in the art, interested in increasing the purity of the sample obtained by the method Parthasarathy, would have been motivated to utilize a pore size of 30-300 Angstroms, as suggested by Padhye, thus resulting in the instantly claimed methods.

8. Claims 73, 75, 83, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parthasarathy et al. (US 2003/0138779 A1) in view of Smith et al. (US 6,310,199 B1).

The instant claims are drawn to the PCR and DNA sequencing product purification methods of claims 21 and 45, further comprising use of a polyelectrolyte coating comprising

polyanions and polycations. These claims also recite providing a mixture of anion and cation exchange particles.

Parthasarathy teaches the method of claims 21 and 45, as discussed above.

Parthasarathy does not teach that the electrolyte comprises polyanions and polycations, nor does Parthasarathy teach providing a mixture of anionic and cationic ion exchange particles.

Smith teaches an ion exchange-based method of nucleic acid purification (see abstract). The ion exchange resin taught by Smith comprises at least two different ion exchange functional groups, an anion exchange group and a cation exchange group (see abstract and column 12, line 32 – column 13, line 1). Smith teaches that this "bimodal" ion exchange resin permits target binding and release to be "controlled and even fine tuned by varying the relative proportion of first and second ion exchange ligands covalently bound to the solid support (column 12, lines 59-63). Smith summarizes the utility of the bimodal ion exchange resins by stating, "The matrices and methods of this invention enable one to isolate a target nucleic acid in very few steps, without the use of hazardous chemicals. Target nucleic acids isolated according to the present invention can be used immediately without further extraction or isolation (abstract)."

It would have been prima facie obvious for one of ordinary skill in the art at the time of invention to utilize the bimodal ion exchange resin taught by Smith in the nucleic acid purification method of Parthasarathy. Smith taught that the bimodal ion exchange resin (comprising anion and cation exchange groups) was particularly well suited to nucleic acid purification, because it permitted tighter control of target binding and release (see above, column 12, lines 59-63). An ordinary practitioner of the method taught by Parthasarathy would have been motivated by these teachings of Smith to utilize a bimodal ion exchange resin in order to

obtain more precise control over target binding and release, and thereby, improve the yield and purity of the resulting purified nucleic acid products. An ordinary practitioner would also have been motivated to use a bimodal ion exchange resin in the method taught by Parthasarathy, since Smith taught that such resins permitted isolation of highly purified targets in a few steps without the need for hazardous chemicals (see abstract). Finally, since Smith taught use of the resins for purification of PCR products from unincorporated nucleotides and primers (see Example 12, columns 27-29), an ordinary practitioner would have expected a reasonable level of success in using the bimodal resins in the purification method taught by Parthasarathy. Therefore, an ordinary practitioner of the nucleic acid purification method taught by Parthasarathy, interested in safely and efficiently obtaining a high yield of highly purified target nucleic acid, would have been motivated to utilize the bimodal ion exchange resins taught by Smith, thus resulting in the instantly claimed methods.

9. Claims 73-75 and 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parthasarathy et al. (US 2003/0138779 A1) in view of Breadmore et al. (WO 03/104774 A1).

The instant claims are drawn to the PCR and DNA sequencing product purification methods of claims 21 and 45, further wherein the polyelectrolyte coating comprises polyanions and polycations added in alternating layers.

The combined teachings of Parthasarathy and Smith result in the method of claims 43 and 83, as discussed above.

Neither Parthasarathy nor Smith teaches forming alternating layers of polyanions and polycations.

Breadmore teaches a method of nucleic acid purification using silica-based extraction procedures (see pages 1-2 for a general description).

Regarding claims 73-75 and 83-85, Breadmore teaches increasing the yield of the purification method by modifying the silica surface with polyelectrolytes. Specifically, Breadmore teaches that the stability of the adsorbed polyelectrolyte layer can be improved by using multiple layers. Breadmore further teaches coating the silica particles with a cationic polymer followed by a second coating with an anionic polymer and repeating this process to form a multilayer (see page 13).

It would have been prima facie obvious for one of ordinary skill in the art to coat the silica particles taught by Parthasarathy with multiple alternating layers of polycations and polyanions since Breadmore taught that such treatment improved the stability of the adsorbed polyelectrolyte layer (see page 13, cited above). Breadmore also taught that such modifications of silica-based resins improved purification yields (see page 13), thereby providing additional motivation for an ordinary practitioner to coat the ion exchange-adapted silica particles taught by Parthasarathy with multiple alternating layers of polycations and polyanions. Since the resins taught by Breadmore were used for purification of nucleic acids, including PCR and DNA sequencing reaction products (page 2, lines 1-4), an ordinary practitioner would have expected a reasonable level of success in using ion exchange-adapted silica particles coated with multiple alternating layers of polyelectrolytes in the method taught by Parthasarathy. Therefore, an ordinary practitioner of the method taught by Parthsarathy, interested in increasing purification yields and resin stability, would have been motivated to use multiple alternating layers of

polyanions and polycations as suggested by Breadmore, thus resulting in the instantly claimed methods.

***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 45 and 46 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8, 14, 15, and 21 of copending Application No. 11/057,936. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 8 recites exactly the same method steps as the instant claim 45. The only difference between these claims is the preamble which is directed to sequencing method in the '936 application and a method of purifying sequencing products in the instant application. Also, the method recited in claim 21 of the '936 application is a specific

embodiment of the method generically recited in the instant claim 45. Therefore, claim 21 of the '936 application anticipates the instant claim 45. The limitations of the instant claim 46 are recited in claims 14 and 15 of the '936 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claim 45 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 15 of copending Application No. 11/355,872. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 8 and 12 of the '872 application recite exactly the same method steps as the instant claim 45. The only difference between these claims is the preamble which is directed to sequencing method in the '872 application and a method of purifying sequencing products in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 45-47 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 51-55, 61-63, 70, and 71 of copending Application No. 11/232,036. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 51-53, 61-63, 70 and 71 of the '036 application recite specific embodiments of the method generically claimed in the instant claim

45, and therefore, anticipate this claim. The limitations recited in the instant claims 46 and 47 are recited in claims 54 and 55, respectively, of the '036 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### *Conclusion*

No claims are currently allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Bertagna whose telephone number is 571-272-8291. The examiner can normally be reached on M-F, 7:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Angela Bertagna
Examiner, Art Unit 1637
December 6, 2006

amb

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